

WHAT IS CLAIMED IS:

1. A TCP/IP·mobile communication network transmission and reception system for conducting transmission from a TCP/IP communication network to a mobile communication network, comprising:

5 a provider access server for the connection of a TCP/IP communication network to receive an IP packet in which an IP address of a mobile communication terminal as a destination of transmission from the TCP/IP communication network is stored at a header; and

10 a mobile communication switching system for extracting an IP address from a header of an IP packet sent from the provider access server and searching for a user's telephone number corresponding to the IP address to send an originating signal and a selection signal  
15 based on the searched user's telephone number to a mobile communication network on the side of said mobile communication terminal.

2. The TCP/IP·mobile communication network transmission and reception system as set forth in claim 1, wherein

said mobile communication switching system  
5 including

a time-division switch for conducting time-division switching of line switching,

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10 a provider connection interworking function  
device for extracting an IP address of the mobile  
communication terminal as a transmission destination  
stored in an IP packet sent from the provider access  
server and searching for a user's telephone number  
corresponding to the IP address to output a selection  
signal and an originating signal based on the searched  
15 user's telephone number,

an originating signal detection circuit for  
detecting an originating signal from the provider  
connection interworking function device,

20 a selection signal reception circuit for  
receiving a selection signal from the provider  
connection interworking function device, and

a calling processing device for executing control  
to send an originating signal from said originating  
signal detection circuit and a selection signal from  
25 said selection signal reception circuit to the mobile  
communication network on the side of said mobile  
communication terminal.

3. The TCP/IP mobile communication network  
transmission and reception system as set forth in claim  
2, wherein

5 said provider connection interworking function  
device including

a terminating processing circuit for conducting

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an asynchronous terminating processing circuit  
10 for conducting terminating processing with respect to  
communication on a serial asynchronous line with the  
provider access server for TCP/IP communication network  
line connection,

an IP address/telephone number converting circuit  
for searching for a user's telephone number  
20 corresponding to an IP address of the mobile  
communication terminal as a transmission destination  
which is stored in a header of an IP packet from the  
synchronous pattern detection circuit, and

4. The TCP/IP mobile communication network transmission and reception system as set forth in claim 3, wherein

5 circuit including

an IP address/telephone number conversion table  
which stores a user's telephone number corresponding to  
an IP address.

5. The TCP/IP mobile communication network  
transmission and reception system as set forth in claim  
1, wherein

said mobile communication network is

5 a mobile communication network in a personal  
digital cellular telecommunication system (PDC).

6. The TCP/IP mobile communication network  
transmission and reception system as set forth in claim  
1, wherein

said mobile communication network is

5 a mobile communication network to which the PIAFS  
standard in the personal handy phone system (PHS) is  
applied.

7. The TCP/IP mobile communication network  
transmission and reception system as set forth in claim  
4, wherein

an IP address and a user's telephone number in

5 said IP address/telephone number conversion table are

set by a manager of the mobile communication  
network accommodating the mobile communication switching

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system.

8. The TCP/IP mobile communication network transmission and reception system as set forth in claim 4, wherein

an IP address and a user's telephone number in  
said IP address/telephone number conversion table are  
set through a terminal accommodated in the TCP/IP  
communication network by the execution of a  
communication control protocol for the IP  
address/telephone number conversion table of the IP  
address/telephone number converting circuit.

9. The TCP/IP mobile communication network transmission and reception system as set forth in claim 1, wherein

said provider access server and said mobile  
communication switching system

conducts switching connection for the  
transmission from the mobile communication terminal  
accommodated in the mobile communication network to the  
TCP/IP communication network.

10. The TCP/IP mobile communication network transmission and reception system as set forth in claim 1, further comprising,

as well as said mobile communication terminal, a



TCP/IP communication network to a mobile communication network as set forth in claim 11, wherein

5           said mobile communication network is  
a mobile communication network in a personal digital cellular telecommunication system (PDC).

13.       The method of conducting transmission from a TCP/IP communication network to a mobile communication network as set forth in claim 11, wherein

5           said mobile communication network is  
a mobile communication network to which the PIAFS standard in the personal handy phone system (PHS) is applied.

14.       The method of conducting transmission from a TCP/IP communication network to a mobile communication network as set forth in claim 11, wherein

5           switching connection for the transmission from the mobile communication terminal accommodated in the mobile communication network to the TCP/IP communication network is conducted.

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